

Docket No.: POUTSKA-2  
Serial No.: 09/880,688

[ ] The Commissioner is hereby authorized to charge the appropriate fee of \$ pursuant to 37 C.F.R. §1.17(c) and 37 C.F.R. §1.136(a) and any additional fees which may be required, or credit any overpayment to Deposit Account No. 06-0502.

[X] The Commissioner is hereby also authorized to charge any fees which may be required during the pendency of this application, including any patent application processing fees under 37 C.F.R. 1.17, and any filing fees under 37 C.F.R. 1.16, including presentation of extra claims, or credit any overpayment to Deposit Account No: 06-0502.

Please amend the above-entitled application as follows:

**AMENDMENTS TO THE CLAIMS WITH MARKINGS TO SHOW CHANGES  
MADE, AND LISTING OF ALL CLAIMS WITH PROPER IDENTIFIERS**

Claims 1-10 (Canceled);

Claims 11-14 (Withdrawn);

Claims 15-26 (Canceled);

Claims 27-36 (Withdrawn);

37. (Previously presented) A method for applying one or more substances such as monomers to a support for the combinatorial synthesis of molecule libraries, comprising the steps of:

Docket No.: POUTKA-2  
Serial No.: 09/880,688

- embedding the substance in a matrix which is at least a first solvent, at a temperature of less than 90° C present in a solid state of aggregation, thereby forming transport units that can be mobilized as units;
- applying the so formed transport units to a support at a temperature of less 90° C, in a solid state, optionally applying to the support the transport units dissolved in a second solvent in a liquid state of aggregation;
- vaporizing the said second solvent component either completely or partially, until the transport units are taking on a solid or gel-like state of aggregation, and after application to the support remain in a solid or gel-like state of aggregation;
- applying a physical process such that the substance dissolved in the first solvent which are present on the support are mobilized within the solvent until the thus mobilized substance enter near a surface area of the support,
- covalently linking the thus mobilized substance to molecules located on the support, or enter into a chemical reaction or catalyse the molecules thereby yielding a number of different substances coupled to the support;
- repeating the forgoing steps until more than one layer is applied to the support followed by the coupling of substances to the support in precise positions, in each case followed by the covalent linking of the substances to the support, and
- washing away non-linked substances.

Docket No.: POUSTKA-2  
Serial No.: 09/880,688

38. (Previously presented) The method of claim 37, wherein the temperature of the first solvent is less than 50° C and the temperature of the transport units applied to the support is less than 50° C.
39. (Previously presented) The method of claim 37, wherein the substance is mobilized within the first solvent.
40. (Previously presented) The method of claim 37, wherein the substance having a particle size in the range between 0.2 µm and 200 µm at a temperature of less than 90°C present in an immobilized state.
41. (Previously presented) The method of claim 40, wherein the particle size is between 2 µm and 40 µm.
42. (Previously presented) The method of claim 40, wherein the temperature is less than 50° C.
43. (Currently amended) The method of claim 47 37, wherein the support is held at a temperature of at least 10° C lower as compared to the temperature of the transport unit until the start of the mobilization of the substances linking reaction of the monomer substances to the support.

Docket No.: POUSTKA-2  
Serial No.: 09/880,688

44. (Previously presented) The method of claim 37, wherein a locally precise transfer of substances takes place with the aid of a suitably modified printing method.
45. (Currently amended) The method of claim 43 44, wherein the printing method is carried out with one of the group consisting of a laser printer, a laser copier and an ink jet printer.
46. (Previously presented) The method of claim 37, wherein a locally precise transfer of substances takes place with the aid of a number of controllable light sources.
47. (Currently amended) The method of claim 45 46, wherein the light source is a light-emitting diode or micro laser.
48. (Previously presented) The method of claim 37, wherein the substances to be applied to the support are sprayed over the support.
49. (Previously presented) The method of claim 37, wherein the substances on the support are cooled and deep-frozen.
50. (Currently amended) The method of claim 37, wherein the substances contain at least one element or bind to such particles that include such

Docket No.: POUTSKA-2  
Serial No.: 09/880,688

element selected from the group consisting of: magnetic constituents; diphenyl formamide; preliminary stages for monomers, dimers or trimers suitable for combinatorial synthesis; preliminary stages of D or L amino acids, nucleosides or derivatized nucleosides or their mirror images or their derivatives []; polystyrene and cellulose to which one or several layers of monomers are linked.

51 (Currently amended) The method of claim 49 50, wherein polystyrene or cellulose is linked with one or several layers of monomers.

52. (Previously presented) The method of claim 37, further comprising the step of after a first cycle of linking reactions, detaching protective groups by standard methods so as to form free amino- or hydroxyl groups for linkage with preliminary stages of monomers, dimers.

53. (Previously presented) A method for applying substances to a support, such as monomers for the combinatorial synthesis of molecule libraries, comprising the steps of:

- repeatedly directing electromagnetic waves in precise positions onto selected regions of the support charged with various molecules or various aggregates of these molecules thereby causing interaction between the various molecules or aggregates of these molecules with the incident electromagnetic waves, wherein the interaction of the

Docket No.: POUSTKA-2  
Serial No.: 09/880,688

incident electromagnetic waves with the molecules or with aggregates of these molecules or with other molecules causes local physical or chemical processes being intimated.

54. (Previously presented) The method of claim 53, wherein the electromagnetic waves are laser light.

55. (Previously presented) A method for applying one or more substances such as monomers to a support for the combinatorial synthesis of molecule libraries, comprising the steps of:

- embedding the substance in a matrix provided in the form of at least a first solvent at a temperature of less than 90° C and in a solid state of aggregation, thereby forming transport units that can be mobilized as units;
- applying the so formed transport units to the support at a temperature of less than 90° C, in a solid state;
- wherein after application to the support the transport units are remaining in a solid or gel-like state of aggregation;
- thereafter applying a physical process such that the substances dissolved in the first solvent which are present on the support are mobilized within the solvent until the substances thus mobilized enter near a surface area of the support, and

Docket No.: POUSTKA-2  
Serial No.: 09/880,688

- covalently linking the thus mobilized substances to molecules located on the support, or enter into a chemical reaction or catalyse the molecules thereby yielding a number of different substances coupled to the support;
- repeating the forgoing steps until more than one layer is applied to the support followed by the coupling of substances to the support in precise positions, in each case followed by the covalent linking of the substances to the support, and
- washing away non-linked substances.

56. (Previously presented) The method of claim 55, wherein the temperature of the first solvent is less than 50° C and the temperature of the transport units applied to the support is less than 50° C.

57. (Previously presented) The method of claim 55, wherein the substance having a particle size in the range between 0.2 µm and 200 µm at a temperature of less than 90 °C is present in an immobilized state.

58. (Previously presented) The method of claim 57, wherein the temperature is less than 50 C.

59. (Previously presented) The method of claim 57, wherein the particle size is between 2 µm and 40 µm.

Docket No.: POUSTKA-2  
Serial No.: 09/880,688

60. (Currently amended) The method of claim 55, wherein the support is held at a temperature of at least 10 °C lower as compared to the temperature of the transport unit until the start of the mobilization linking reaction of a monomer the substances to the support.
61. (Previously presented) The method of claim 55, wherein a locally precise transfer of substances takes place with the aid of a suitably modified printing method.
62. (Previously presented) The method of claim 61 wherein the printing method is carried out with one selected from the group consisting of a laser printer and a laser copier.
63. (Previously presented) The method of claim 55, wherein a locally precise transfer of substances takes place with the aid of a number of controllable light sources.
64. (Previously presented) The method of claim 63, wherein the light source is a light-emitting diode or micro laser.
65. (Previously presented) The method of claim 55, wherein the substances to be applied to the support are sprayed over the support.

Docket No.: POUTKA-2  
Serial No.: 09/880,688

66. (Previously presented) The method of claim 55, wherein the substances on the support are cooled and deep-frozen.

67. (Previously presented) The method of claim 55, wherein the substance contains at least one element or bind to such particles that include an element selected from the group consisting of: magnetic constituents; diphenyl formamide; preliminary stages for monomers, dimers or trimers suitable for combinatorial synthesis; preliminary stages of D or L amino acids, nucleosides or derivatized nucleosides or their mirror images or their derivatives; polystyrene and cellulose.

68 (Previously presented) The method of claim 67, wherein the cellulose is linked with one or several layers of monomers.

69. (Previously presented) The method of claim 55, further comprising the step of after a first cycle of linking reactions, detaching protective groups by standard methods so as to form free amino- or hydroxyl groups for linkage with preliminary stages of monomers, dimers.

70. (Previously presented) The method of claim 55, wherein the support used is one or more selected from the group consisting of polystyrene films, paper, CDs, MODs, DVDs or FMDs.

Docket No.: POUTSKA-2  
Serial No.: 09/880,688

71. (Previously presented) The method of claim 55, wherein the immobilised substances are moved by applying an electrical voltage.

72. (Previously presented) A method for applying substances such as monomers to a support comprising the steps of:

- repeatedly directing electromagnetic waves in precise positions onto selected regions of the support charged with various molecules or various aggregates of these molecules thereby causing interaction between the various molecules or aggregates of these molecules with the incident electromagnetic waves, wherein through the interaction of the incident electromagnetic waves with the molecules or with aggregates of these molecules or with other molecules, local physical or chemical processes are carried out.

73. (Previously presented) A method for applying immobilized biological molecules to a support comprising the steps of: positioning the biological molecules to the support using at different times, transport units with different biological molecules; then coupling to the support at least two different biological molecules in one single combinatorial synthesis.

74. (Previously presented) The method of claim 37, wherein the second solvent is dimethyl formamide.